

Empire Offshore Wind LLC

Empire Wind 2 Project

Exhibit 9

Cost of Proposed Facility

REDACTED FOR PUBLIC DISCLOSURE

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ACRONYMS AND ABBREVIATIONS

AFUDC	allowance for funds used during construction
BOEM	Bureau of Ocean Energy Management
Empire or the Applicant	Empire Offshore Wind LLC
EW 2	Empire Wind 2
HVAC	high-voltage alternating-current
km	kilometer
kV	kilovolt
Lease	Commercial Lease of Submerged Lands for Renewable Energy Development on the Outer Continental Shelf OCS-A 0512
Lease Area	Bureau of Ocean Energy Management-designated Renewable Energy Lease Area OCS-A 0512
LIPA	Long Island Power Authority
mi	mile
nm	nautical mile
NYCRR	New York Codes, Rules and Regulations
NYISO	New York Independent System Operator, Inc.
NYSPSC or Commission	New York State Public Service Commission
NY Project	EW 2 Project transmission facilities in New York
POI	Point of interconnection at an expansion of the Barrett 138-kV Substation
PSEG-LI	PSEG Long Island
PSL	New York Public Service Law

EXHIBIT 9: COST OF PROPOSED FACILITY

9.1 Introduction

Empire Offshore Wind LLC (Empire or the Applicant) proposes to construct and operate the Empire Wind 2 (EW 2) Project as one of two separate offshore wind projects to be located within the Bureau of Ocean Energy Management (BOEM) designated Renewable Energy Lease Area OCS-A 0512 (Lease Area). The EW 2 Project will require an electric transmission system to connect the offshore wind farm to the point of interconnection (POI) to the New York State Transmission System. An electric transmission line with a design capacity of 125-kilovolt (kV) or more, extending a distance of one mile or more, is subject to review and approval by the New York State Public Service Commission (Commission or NYSPSC) as a major electric transmission facility pursuant to Article VII of the New York Public Service Law (PSL). The EW 2 Project transmission system will extend a total of approximately 12.1 miles (mi) (19.5 kilometers [km]) within the State of New York and includes 230-kV export cable circuits and 345-kV interconnection cable circuits. As such, this application is being submitted to the Commission pursuant to Article VII of the PSL for the portions of the EW 2 Project transmission system that are located within the State of New York (collectively, the NY Project).

The NY Project will interconnect to the New York State Transmission System operated by the New York Independent System Operator, Inc. (NYISO) at the Oceanside POI, located at an expansion of the Barrett 138-kV Substation. The Barrett 138-kV Substation is owned by the Long Island Power Authority (LIPA) and operated by PSEG Long Island (PSEG-LI) and is located in Oceanside in the Town of Hempstead, New York. The NY Project will enter LIPA's substation at 345 kV, where the voltage will be converted to 138-kV within the POI. The onshore portion of the NY Project will be located entirely within Nassau County, New York.

The NY Project includes:

- Three three-core 230-kV high-voltage alternating-current (HVAC) submarine export cables located within an approximately 7.7-nautical mile (nm, 14.2-km)-long submarine export cable corridor from the boundary of New York State waters 3 nm (5.6 km) offshore to the cable landfall;
- A cable landfall in the City of Long Beach, New York;
- Three 230-kV onshore export cable circuits, each with three single-core HVAC onshore export cables within an approximately 1.5-mi (2.4-km)-long onshore export cable corridor from the cable landfall to the onshore substation;
- An onshore substation in the Village of Island Park, within the Town of Hempstead, New York, which will step up the voltage to 345-kV for the onshore interconnection cables; and
- Up to three 345-kV interconnection cable circuits, each with three single-core HVAC interconnection cables within an approximately 1.7-mi (2.8-km)-long interconnection cable corridor from the onshore substation to the POI.

This Exhibit addresses requirements of 16 New York Codes, Rules and Regulations (NYCRR) § 86.10: Cost of Proposed Facility. Because the Applicant is in the midst of competitive bidding processes for the engineering, construction, and procurement services for the NY Project, the Applicant requests that the cost estimates included in this Exhibit remain confidential.

9.2 Total Capital Cost Estimate

The total capital cost estimate for the NY Project, which includes right-of-way acquisition, survey activities, materials, construction labor, engineering and inspection costs, administrative overhead, fees for legal and other services, interest during construction, and contingency funds, is provided in **Table 9.2-1**, along with a breakdown into cost categories in accordance with 16 NYCRR § 86.10. This estimate only includes NY Project facilities under PSL Article VII jurisdiction. The estimate is provided in 2021 dollars; escalation and sales tax, if applicable, have not been included.

Table 9.2-1 Estimate of Total Capital Cost by Category

Cost Category	Cost Estimate (2021 dollars)
Right-of-way	██████████
Surveys	██████████
Materials	██████████
Labor	██████████
Engineering and Inspection	██████████
Administrative Overhead	██████████
Fees for Legal and Other Services	██████████
Interest During Construction (AFUDC)	██████████
Contingencies	██████████
Total	██████████

9.3 Information Sources

The estimates provided in **Table 9.2-1** are based on conceptual studies, estimates developed from the Applicant's Offshore Renewable Energy Credit bid, quantity-based estimates provided by suppliers and vendors, preliminary estimates from contractors and suppliers, awarded contracts (e.g., for the submarine export cables) and the Applicant's experience with similar offshore wind farm development and construction projects. Land acquisition and right-of-way costs were estimated based on market rates of the onshore export and interconnection cable corridors and other anticipated acquisition costs; 9 NYCRR § 271-1.7 provisions, for a grant of easement for the New York Office of General Services¹; and site acquisition discussions for the onshore substation. The breakdown of the total capital cost estimate into cost categories is based on the Applicant's best judgement.

The following assumptions have been included in the cost estimate:

- To determine the costs associated with the submarine export cables within New York waters, costs are pro-rated from the total cost for the EW 2 Project, based on the proportion of the submarine export cable length in New York State.
- The cost breakdown assumes that engineering is approximately 6%, materials are 20%, labor is 46%, surveys are 1% and contractor management is 10% of the total facilities cost (excluding contingency and interest).

¹ For the purposes of this cost estimate, New York Office of General Services easement fees have been assumed for the entire submarine export cable route in New York State waters.

- Contingency on the overall estimate is 15.6%. Additional variable contingency is included on individual components. Individual components may have a higher or lower contingency than the contingency percentage on the total estimate.
- Interest during construction or allowance for funds used during construction (AFUDC) is calculated at a rate of 3.5%.
- Right-of-way costs assume an approximately 30-year assumed NY Project lifespan. The submarine export cable right-of-way is based on two 25-year lease terms. Note that escalation was also excluded from annual lease costs.